

REMARKS

Claims 1-10 are pending in this application. By this amendment, claims 1, 10 and 14, and the specification have been amended. Reexamination and reconsideration of the application are respectfully requested.

On page 2 of the Office Action, the drawings are objected to because reference character “184” has been used to designate both a main bearing and an auxiliary bearing, and because reference character “308” has been used to designate both an auxiliary bearing and an auxiliary shaft. Applicants have amended the specification in a manner to overcome this objection. The specification has also been amended for grammatical and general readability purposes. No new matter has been added. Accordingly, Applicants kindly request that the objection be withdrawn.

On page 3 of the Office Action, claims 1-3 and 5 are rejected under 35 U.S.C. §102(b) over Ishida et al. (WO 03/008805, U.S. Patent No. 7,144,229 being relied upon as an equivalent English translation of WO 03/008805); on page 6 of the Office Action, claims 4-7 are rejected under 35 U.S.C. §103(a) over Ishida et al.; on page 11 of the Office Action, claim 9 is rejected under 35 U.S.C. §103(a) over Ishida et al in view of Kawahara et al. (U.S. Patent No. 5,340,287); on page 7 of the Office Action, claims 10, 13, and 14 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ishida et al. in view of Tamura et al. (U.S. Patent No. 6,547, 538); and on page 10 of the Office Action, claims 11 and 12 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ishida et al. in view of Tamura et al., and further in view of Kandpal (U.S. Patent No. 5, 266,016). These rejections are respectfully traversed.

Independent claims 1 and 10 each require, inter alia, a second oil pump provided above the first oil pump and a third oil pump. The second oil pump is formed by a spiral groove, provided on an outer periphery of the shaft, and an inner peripheral wall surface of the rotor. The third oil pump is formed by a spiral groove, provided on the outer periphery of the shaft, and an inner peripheral surface of the bearing. The combination of applied references fails to disclose this feature and the advantages achieved thereby.

Applicants note that the second oil pump operates to provide the required pump head (head) needed to convey the lubricating oil upward. Thus, even if the compressor is operated at

low speeds, the second oil pump can provide sufficient oil feed with a simple construction and a reduced number of parts.

In rejecting claims 1 and 10, the Examiner asserts that the spiral groove 20 of Ishida et al. can be considered to correspond to the claimed second oil pump and third oil pump because the spiral groove 20 is provided above the slanting channel 19 (first oil pump), and is provided on the outer periphery of the shaft 7 and opposes an inner peripheral wall surface of the rotor 3b. Applicants respectfully disagree with the assertion that the spiral groove can be considered to correspond to the claimed second and third oil pumps for the following reasons.

Ishida et al. discloses that the spiral groove 20 is provided on the outer periphery of main crank shaft 7a (see, e.g., col. 5, lines 48-49, and col. 6, lines 6-8), and opposes an inner peripheral surface of the bearing, i.e. not an inner peripheral wall surface of the rotor 3b. Thus, Ishida lacks the claimed second pump. In fact, the spiral groove 20 is completely isolated from the inner peripheral wall surface of the rotor 3b by the bearing 8. As shown in Fig. 1 and as described in col. 5, lines 48-51, the spiral groove 20, which is provided on the main crank shaft 7a, is enclosed by the bearing 8. For at least these reasons, the spiral groove 20 of Ishida et al. cannot be considered to correspond to the claimed second oil pump as suggested by the Examiner. In addition, none of the other references of record remedy this deficiency of Ishida et al.

Accordingly, reconsideration and withdrawal of the rejections of independent claims 1 and 10, and claims 2-9 and 11-14 depending therefrom, respectively, are requested.

Moreover, regarding claim 3, Applicants submit that Ishida et al. fails to disclose the features recited therein. The Examiner asserts that spiral groove 20 opens in communication with a first gap that is formed between the rotor 3b and the bearing 8. Applicants respectfully disagree. The spiral groove 20 that is formed on the main crankshaft 7a is enclosed, or in other words sealed, by the bearing 8. As such, the spiral groove 20 is not in communication with the space formed between the rotor 3b and the bearing 8.

In addition, Applicants also submit that the rejection of claim 8 on page 7 of the Office is improper. The Examiner, on page 7, states that according to Applicants' specification, it is apparent that the elastically deformable washer is placed in the first gap for the purpose of

reducing the amount of oil that flows through the gap. The Examiner then concludes that it would have been obvious to one of ordinary skill in the art to provide an elastically deformable washer in the device of Ishida et al. in order to reduce oil flow. It is apparent that the Examiner gleaned from the Applicants' specification, the reason for providing the washer in the device of Ishida et al. In this regard, the Examiner has not provided any rational reason to include the washer in the environment of Ishida. As such, Applicants submit that the Examiner's conclusion of obviousness is based on improper hindsight. Moreover, Applicants also submit that one of ordinary skill in the art would not have attempted to provide an elastically deformable washer in the device of Ishida et al. for the purpose of reducing oil flow through the gap formed between the bearing 8 and the rotor 3b. In particular, there is no oil flow in the Ishida device between the bearing 8 and the rotor 3b. The oil in Ishida et al. travels through the inlet port 29 and up the main crankshaft 7a via slanting channel 19 and spiral groove 20. Importantly, no portion of the slanting channel 19 or the spiral groove 20 is open to the gap formed between the bearing 8 and the rotor 3b. Accordingly, there would be no reason to provide an elastically deformable bearing as suggested by the Examiner.

In addition, the Examiner cited the Kawahara et al. reference for disclosing the features as required in claim 9. However, the Kawahara et al. reference provides no teaching or suggestion that obviates the above-discussed shortcomings of the Ishida et al. reference with respect to claim 1. Thus, claim 9 also would not have been suggested by the combination of Ishida et al. and Kawahara et al. by virtue of its dependence from claim 1. Accordingly, reconsideration and withdrawal of the rejection of claim 9 are respectfully requested.

In view of the foregoing, reconsideration and allowance of this application are now believed to be in order.

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